
FCC-ee topical meeting on vertexing, February 10, 2021

Joint meeting of the FCC-ee Physics Performance and of the FCC Software group

Goals of today's meeting

- Vertexing often came up in our Physics Performance meetings, as a crucial tool for many analyses
- Last time we discussed about vertexing “in practice” was in October :
<https://indico.cern.ch/event/965346/>
 - First attempt to run the ILC algorithm over FCC event files
 - Cumbersome, had to convert to LCIO (ILC format) first, ...
- Quite some progress since then, so now is a good time to go through:
 - Activities that have recently been made
 - New developments that could start now/soon
 - The integration of (some) existing vertexing software

In the process of defining requirements on the vertex detector:
should make use of the best possible vertexing tools in the sensitivity analyses.

Today's meeting should help us review the current status and define projects to move forward in this direction.

Agenda

14:00 → 14:05 **Introduction**

Speakers: Clement Helsens (CERN), Emmanuel Francois Perez (CERN), Gerardo Ganis (CERN), Patrizia Azzi (INFN Padova (IT))

14:05 → 14:15 **Physics motivations**

Speaker: Roy Aleksan (Université Paris-Saclay (FR))

14:15 → 14:35 **A stand-alone vertex-fitting algorithm**

Speaker: Franco Bedeschi (Universita & INFN Pisa (IT))

14:35 → 14:55 **First example resolutions of displaced vertices in exclusive processes (using FB's algo)**

Speakers: Clement Helsens (CERN), Emmanuel Francois Perez (CERN)

14:55 → 15:25 **The DecayTreeFitter algorithm**

Speaker: Wouter Hulsbergen (Nikhef National institute for subatomic physics (NL))

15:25 → 15:45 **Implementation of the LCFI+ algorithm into key4hep**

Speakers: Andre Sailer (CERN), Placido Fernandez Declara (CERN)

15:45 → 16:05 **Status of ACTS (tracking and) vertexing, and implementation in key4hep (t.b.c.)**

Speakers: Andreas Salzburger (CERN), Bastian Schlag (CERN / JGU Mainz), Paul Gessinger-Befurt (CERN / JGU Mainz)